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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR                         | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------------------------------|---------------------|------------------|
| 10/008,335      | 11/08/2001  | Raymond Wilhelmus Herman Johannes Verbruggen | NL 000609           | 3419             |

24737 7590 09/11/2003

PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
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BRIARCLIFF MANOR, NY 10510

[REDACTED] EXAMINER

HANNAHER, CONSTANTINE

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2878

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                         |                                            |  |
|------------------------------|-----------------------------------------|--------------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b>                  | <b>Applicant(s)</b>                        |  |
|                              | 10/008,335                              | VERBRUGGEN, RAYMOND<br>WILHELMUS HERMAN JO |  |
|                              | <b>Examiner</b><br>Constantine Hannaher | <b>Art Unit</b><br>2878                    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 08 November 2001.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-5 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 November 2001 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

|                                                                                                              |                                                                             |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

1. Fig. 6A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

## **Claim Objections**

2. The detector array of claim 4 must refer to the array of detector *elements* of claim 1.

3. Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 5 omits the radiation source and sample location of claim 1 and thus does not further limit the parent claim.

## **Claim Rejections - 35 USC § 112**

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "the electronic read-out circuits" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim. Claim 1 establishes only a circuit in the singular at line 9.

### **Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessendorf *et al.* (US006573762B1) in view of Shimizu *et al.* (US005113077A).

With respect to independent claim 1, Wessendorf *et al.* discloses an analog pulse processor particularly useful for processing the signals from semiconductor radiation detectors (column 1, lines 27-29) and more particularly for processing signals from photodiodes attached to scintillators (column 2, lines 24-26). Wessendorf *et al.* also discloses a radiation source (column 8, lines 5 and 10). Shimizu *et al.* shows that photodiodes attached to scintillators are a routine element of a device for analysis of materials by means of radiation, and that such a device (Fig. 8) comprises a radiation source 70, a sample location for accommodating a sample P of the material to be analyzed, and a position sensitive detection device 71 for detecting the radiation emanating from the sample. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the processor of Wessendorf *et al.* was suitable for inclusion in a device of the recited type in view of the advantageous smaller volume, lower power consumption, and effective performance (Figs. 7 and 8). The detection device of Wessendorf *et al.* includes an array of radiation sensitive detector elements (column 2, lines 23-26) and an electronic read-out circuit (Fig. 1) which is connected to the detector array and includes a charge amplifier (Fig. 2) the input of which is connected to a detector element. The inclusion of charge amplifiers in a one-to-one relationship with the detector elements

and connection of the input of the charge amplifiers to a respective detector element is suggested by Shimizu *et al.* (Fig. 1). Since Wessendorf *et al.* suggests use of the circuit as a readout for detectors (in the plural) without further explanation, it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to Shimizu *et al.* for suggestions as to the relationship between a plurality of radiation sensitive detector elements and a circuit which includes a charge amplifier and connect the circuit of Wessendorf *et al.* to detectors by the inclusion of charge amplifiers according to Figs. 1 and 2 in a one-to-one relationship with respective connection to one detector element. The charge amplifiers are constructed in the integrated bipolar technique (column 7, line 24). The electronic circuit includes signal processing circuits connected to the outputs of the charge amplifiers (for example, the analog to digital converter of Fig. 1) which are constructed in the digital technique (column 3, line 66).

With respect to dependent claim 2, the signal processing circuits constructed in the digital technique are accommodated on the same substrate as the charge amplifiers in the processor of Wessendorf *et al.* (column 2, lines 33-37).

With respect to dependent claim 4, Wessendorf *et al.* describes coupling a photodiode to the disclosed ASIC (column 7, lines 62-64). Accommodation on a common support would have been obvious to one of ordinary skill in the art at the time the invention was made in view of Wessendorf *et al.*'s desire for a compact package and the desire to reduce stress on the electrical connection (AC coupling). An insulative material such as a ceramic would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the desire for electrical independence.

With respect to dependent claim 5, since this claim does not further limit the parent claim, any combination effective against claim 1 is effective against this claim.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wessendorf *et al.* (US006573762B1) and Shimizu *et al.* (US005113077A) as applied to claim 2 above, and further in view of Bales (US006114874A).

With respect to dependent claim 3, the signal processing circuits constructed in the digital technique in the processor of Wessendorf *et al.* are constructed by means of a BiCMOS process (column 3, line 66) but do not mention a CML technique. Bales discloses (column 1, lines 12-29) that the CML technique is routinely used for circuits where high speed is desired. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the processor of Wessendorf *et al.* to specify that the signal processing circuits constructed in the digital technique therein are in the form of the CML technique in view of the high speed which would be desirable to reduce the time to which the sample is exposed to the radiation source. As made clear by Bales, the BiCMOS process is entirely compatible with the CML technique.

### **Response to Submission(s)**

9. The amendment filed November 8, 2001 has been entered.

10. This application has been published as US2002/0053641A1 on May 9, 2002 and as JP2002-250705A on September 6, 2002.

### **Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ch

  
Constantine Hannaher  
Primary Examiner